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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/473,176	12/28/1999	ALAN STUART FELDMAN	66180.0400/H	9679

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EXAMINER

ROY, SIKHA

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/473,176

Applicant(s)

FELDMAN, ALAN STUART

Examiner

Sikha Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 February 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 36-59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 12, 2003 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 36-38,40,41,44 - 47, 49 - 52, 54 - 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor ('116) in view of U. S. Patent 5,818,164 to Winsor ('164).

Referring to claim 36, Winsor ('116) discloses (column 2 lines 48-62 Fig. 1) a planar fluorescent lamp comprising an enclosure formed of a pair of side walls 18 and 20 and a pair of end walls 14 and 16. A plurality of divider walls 26 extend from the sidewall 14 towards the sidewall 16 but do not touch it. Similarly the divider walls 28 extend from the sidewall 16 towards the sidewall 14 but do not contact it. These divider

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walls create channels, each channel having two ends towards the two end walls 14 and 16. A plurality of electrodes (38a- 38c, 40a- 40c Fig. 4) is positioned adjacent each sidewall and at two ends of the channel segments (column 3 lines 24-33). Winsor ('116) further teaches (column 4 lines 58-69 Figs. 3 and 4) AC power is provided to sidewall electrodes in pairs, AC power supply 42 is connected between terminals 56 and 66 to drive electrodes 38a and 40a, the activation voltages creating discharges across the electrodes inherently alternate in polarity along the channel segments. It is noted (column 1 lines 58-60, Fig. 4) that the sidewall electrodes extend generally from one divider wall to the other divider wall so that the first end (towards the top wall 16) of adjacent first channel and second channel segments coincide in a common electrode area 40a, 40b and the second end (towards the bottom wall 14) of adjacent first and second channel segments coincide in a common electrode area 38a, 38b.

Claim 36 differs from Winsor ('116) in that Winsor ('116) does not exemplify the enclosure including a lid which is partially coated with a fluorescent material.

Winsor ('164) in analogous art of planar fluorescent lamp with electrode housing discloses (column 3 lines 35-37, column 4 lines 14-17 Fig. 2) a transparent lid (cover 50) on the lamp body mating to the upper edges of the side walls and end wall positioned opposite to the bottom end. The lower surface of the lid (cover) is coated with fluorescent layer so that light is emitted from the top.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify the top end of the flat lamp of Winsor ('116) by a transparent

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lid coated with fluorescent material as taught by Winsor('164) for increasing the light output.

Referring to claim 54 Winsor ('116) teaches (column 4 lines 58-69 Figs. 3 and 4) AC power is provided to sidewall electrodes in pairs, AC power supply 42 is connected between terminals 56 and 66 to drive electrodes 38a and 40a, the alternating voltages inherently alternating in polarity along the channel segments.

Referring to claim 37, Winsor ('116) discloses (column 2 lines 60,61) the interior (divider) walls 26, 28 inside the enclosure defining the channel (path) through the discharge chamber.

Referring to claim 38, Winsor('116) discloses (column 3 lines 39-41) a reflective film applied to the bottom plate of the planar fluorescent lamp to increase the light output.

Referring to claims 40 and 41 the fluorescent lamp further includes a phosphor layer within the sealed chamber such that the UV radiation emitted by plasma arc directly impinges on the phosphor layer (column 8 lines 67,68, column 9 lines 1,2).

Regarding claims 44 and 45 Winsor ('116) discloses (column 8, lines 66-68, column 9 lines 1,2 claim 4) the channel includes activation material (mercury vapor gas) forming electric plasma emitting UV light.

Referring to claims 46 and 47 Winsor('116) discloses (column 2 lines 60,61) that the plurality of the divider walls in the flat (planar) fluorescent lamp defines a serpentine channel (path) through the discharge chamber.

Referring to claim 49 Winsor('116) notes (column 5 line 4) that hot cathode or thermionic filament can be used as electrodes.

Referring to claim 50 Winsor ('116) teaches (column 3 lines 17-23, Fig 3) AC power source 34 used to provide power for the electrodes.

Referring to claim 51 Winsor ('116) notes that DC power source can be used to raise the electrode to desired temperature.

Regarding claims 52 and 56 it is evident from Fig.1 that channel segments are equal in length and are configured in parallel.

Regarding claims 55 and 57, Fig. 1 discloses channel comprising seven conjoined channel segments configured along six parallel paths. The channel comprising two electrodes has three conjoined channel segments and two parallel paths. Therefore in general channel comprises  $n$  conjoined channel segments,  $n$  being greater than two, configured along  $m$  parallel paths,  $m$  being greater than one.

Claims 39, 43 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor ('116) and U. S. Patent 5,818,164 to Winsor ('164) and further in view of U. S. Patent 6,218,776 to Cull et al.

Regarding claim 39, Winsor ('116) and Winsor ('164) do not exemplify the reflective material comprising aluminum and ceramic.

Cull et al. In analogous art of flat fluorescent lamp disclose (column 6 lines 55,56, claim 20) reflective material selected from a group consisting of aluminum and ceramics. It is well known in the art to use aluminum and ceramics as reflecting material for their good reflecting property.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to specify the reflective material of the enclosure of Winsor ('116) and Winsor ('164) from a group consisting of aluminum and ceramic as taught by Cull et al. for their reflecting property which would enhance the brightness of the lamp.

Regarding claim 43 Cull et al. disclose (column 3 lines 29-32) rare earth phosphors used as fluorescent material that produces light upon bombardment of ultraviolet radiation.

Regarding claim 48 Winsor ('116) does not disclose the portion of the channel formed by the divider walls having asymmetric cross section.

Cull et al. in analogous art of flat fluorescent lamp disclose (column 4 lines 9-20) in Figs. 3D-E the diffuse channels having cross section that is asymmetrical and a channel wall formed such that the top portion tapers inward toward the diffuse channel cavity. It is further noted that this type of design yields a concentrated cone of light corresponding to a desired range of viewable angles.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify the serpentine channels of Winsor's lamp by the one having asymmetrical cross section as taught by Cull et al. for yielding a concentrated cone of light corresponding to a desired range of viewable angles.

Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor ('116) and U. S. Patent 5,818,164 to Winsor ('164) in view of U. S. Patent 5,903,096 to Winsor ('096).

Winsor ('116) and Winsor ('164) do not disclose the interior walls being flared at each end to increase uniformity.

Winsor ('096) in relevant art of luminescent lamp disclose (column 3 lines 59-67, column 4 lines 1-3 Figs. 2A,3) the distal end of each channel wall (guide member) comprising flares (angled fins) designed to guide the plasma discharge toward a central portion of the serpentine channel to provide more uniform light.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the interior walls of the lamp of Winsor ('116 and '164) by flared ends as suggested by Winsor ('096) for providing more uniform light.

Claims 58 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor ('116) and U. S. Patent 5,818,164 to Winsor ('164) in view of U. S. Patent 5,602,444 to Jansma.

Regarding claims 58 and 59 Winsor ('116) and Winsor ('164) do not disclose a semitransparent layer applied to a portion of the enclosure to block ultraviolet radiation.

Jansma in pertinent art of fluorescent lamp disclose (column 1 lines 57-60, column 2 lines 26-35 Fig. 1) the inner surface of the discharge fluorescent lamp 10 is provided with an ultraviolet reflecting barrier layer 14. Jansma further notes that this



layer beneficially reflects UV light back leading to more efficient production of visible light.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify a portion of the enclosure of Winsor ('116) and Winsor ('164) by a layer which reflects ultraviolet radiation as taught by Jansma for more efficient production of visible light.

### ***Response to Arguments***

Applicant's arguments with respect to claims 36-59 have been considered but are not persuasive.

In response to Applicant's argument Winsor ('116) reference fails to recite the limitation of activation voltages alternate in polarity, the Examiner respectfully disagrees. Winsor ('116) teaches a plurality of electrodes (38a- 38c, 40a- 40c Fig. 4) is positioned adjacent each sidewall and at two ends of the channel segments (column 3 lines 24-33). Winsor ('116) further teaches (column 4 lines 58-69 Figs. 3 and 4) AC power is provided to sidewall electrodes in pairs, AC power supply 42 is connected between terminals 56 and 66 to drive electrodes 38a and 40a, power supply 44 connected between 38b and 40b and power supply 46 connected between 38c and 40c, the activation voltages inherently alternating in polarity along the channel segments so that discharge takes place between a pair of electrodes.

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**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.

Sikha Roy  
Patent Examiner  
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